

In the claims:

1. (currently amended) An integrated actuator for an optical switch mirror array used in optical communication systems, said integrated actuator comprising:

means for applying a non-electromagnetic tilting push force to a mirror, against an underside thereof and against a fin extending from said underside for developing an initial tilt position of said mirror as it rotates about a torsion beam,

said tilting force application means comprising a gas blast apparatus providing said tilting push force as a pulse; and

means for applying a an electromagnetic pull-in force to complete the tilt of said mirror to its final optical switching position beyond said initial tilt position in the mirror array.

2. (deleted)

3. (deleted)

4. (deleted)

5. (original) The actuator of claim 1 wherein said means for applying a pull-in force comprises an electrostatic generator for generating an electrostatic force.

6. (original) The actuator of claim 1 wherein said means for applying a pull-in force comprises a magnetic generator for generating a magnetic force.

7. (original) The actuator of claim 1 wherein said means for applying a pull-in force comprises a combination of electrostatic and magnetic generators for generating a combined electrostatic and magnetic force.

8. (original) The actuator of claim 1 wherein said fin extends from said underside of said mirror in substantially perpendicular fashion.

9. (original) The actuator of claim 1 wherein said fin extends from said underside of said mirror in an inclined fashion, to enhance and prolong the effect of the blast.

10. (original) The actuator of claim 1 further comprising a plurality of fins extending from said underside of said mirror in combined perpendicular and inclined fashion.

11. (currently amended) A combined actuator for an optical switch mirror array used in optical communication systems, said integrated actuator comprising a combined actuation mechanism based upon a pulsed gas flow providing a mechanical, non-electromagnetic tilting push force and an electrostatic pull-in force.

12. (currently amended) A combined actuator for an optical switch mirror array used in optical communication systems, said integrated actuator comprising a combined actuation mechanism based upon a pulsed gas flow providing a mechanical, non-electromagnetic tilting push force and a magnetic generator providing a magnetic pull-in force.

13. (currently amended) A method of actuating a micro-mirror in an optical switch mirror array used in optical communication systems, said method comprising:

applying a mechanical, non-electromagnetic tilting push force to bring the mirror to a tilted position, and

applying at least one of an electrostatic and magnetic force to achieve pull-in to complete the tilt of the mirror to its final optical switching position,

said tilting push force application being performed by a gas blast apparatus providing said tilting push force as a pulse.

14. (currently amended) A method of actuating a micro-mirror in an optical switch mirror array used in optical communication systems, said method comprising:

applying a mechanical, non-electromagnetic tilting push force to bring the mirror to a tilted position, and

applying a combination of an electrostatic and magnetic force to achieve pull-in to complete the tilt of the mirror to its final optical switching position,

said tilting push force application being performed by a gas blast apparatus providing said tilting push force as a pulse.

15. (original) The method of claim 14 wherein said combined electrostatic and magnetic force achieve pull-in to complete the tilt of the mirror to its final optical switching position, and wherein said magnetic force ensures latching in said final position, even if there is a power failure.